Evaluation Matrix

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Date: _8/29/2008__ **MLRA:** _42 _ **Ecological Site:** _ Limestone Hills_R042XE001NM__ This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.
Composition (indicators 10 and 12) based on:_X_Annual Production, __Cover Produced During Current Year __Biomass

	Departure from Reference Sheet				
Indicator	**Extreme**	**Moderate to Extreme**	**Moderate**	**Slight to Moderate**	**None to Slight**
1. Rills*	Rill formation is severe and well defined throughout most of the site.	Rill formation is moderately active and well defined throughout most of the site.	Active rill formation is slight at infrequent intervals; mostly in exposed areas.	No recent formation of; old rills have blunted or muted features**.**	There can be a few rills that should be short (<2') and discontinuous.
2. Water Flow Patterns *	Water flow patterns extensive and numerous; unstable with active erosion; almost always (>75%) connected.	Water flow patterns more numerous and extensive than expected; deposition and cut areas common; usually (50-75%) connected.	Number and length of water flow patterns moderately exceed what is expected for the site; erosion is minor with some instability and deposition; often connected (+- 50%).	Number and length of water flow patterns nearly match what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short; occasionally (<25%) connected.	There can be a few flow patterns that should be short (<5') and discontinuous. In drainages, flow patterns can linear and continuous, occasionally transporting large volumes of water moving gravel and cobbles.
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestaled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestaled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare, some evidence of past formation, especially in water flow patterns on exposed slopes.	There should be no pedestals. There may be some terracettes (<2") of litter behind cobbles and vegetation.
4. Bare Ground	Much higher than expected for the site. Bare areas are large and almost always (>75%) connected.	Moderate to much higher than expected for the site. Bare areas are large and often (+-50%) connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are occasionally larger than expected and rarely connected.	Bare ground can make up to 20-25% of the ground cover on this site according to the ESD. If present, bare patches should be small (<3') and discontinuous.

5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active**.**	Moderate in number to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; down-cutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon, vegetation is stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion**.**	None. Stable, natural drainages with little to no active cutting can be present on this site. There should not be any accelerated erosion.
6. Wind Scoured,	Extensive.	Common.	Occasionally present	Infrequent and few.	None
7. Litter Movement (wind or water)	Extreme; concentrated around obstructions. Most size classes of litter have been displaced**.**	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions**.**	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	There can be extensive movement of all litter sizes in natural drainages. Otherwise, fine litter should move <5' and woody litter can move up to 3' across bare patches.
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Soil stability values should be 5-6 in interspaces and under plant canopies.
9. Soil Surface Loss (especially in plant interspaces	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site (both interspaces and beneath plant canopies). Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces (soil structure is degraded and soil organic matter content is significantly reduced); only some degradation beneath plant canopies..	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Ft. Bliss Soil Survey, Dozer: Altuda: At least 2 inches thick; brown (7.5YR 5/3), dark brown (7.5YR 3/3) moist; weak fine subangular blocky structure; Deama: At least 2 inches thick; brown (7.5YR 4/3), dark brown (7.5YR 3/2) moist; weak fine subangular blocky parts to moderate very fine granular structure
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration**.**	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	These shallow soils can saturate quickly and runoff can be rapid. Uniformly distributed grass patches should decrease runoff and increase infiltration. Higher relative proportion of shrub cover, however, will tend to increase run-off.

11. Compaction Layer (below soil surface)	Extensive and severely restricts water movement and root penetration.	Widespread and greatly restricts water movement and root penetration.	Moderately wide-spread and moderately restricts water movement and root penetration.	Rarely present or if common is thin and weakly restrictive to water movement and root penetration.	There should not be any compaction layers on this site.
12. Functional/ Structural Groups (F/SGroups)	Number of F/S groups greatly reduced AND/OR Relative dominance of F/S groups has been dramatically altered AND/OR Number of species within F/S groups dramatically reduced.	Number of F/S groups reduced AND/OR One dominant group and/or one or more sub-dominant group replaced by F/S groups not expected for the site or by a F/S group that should always remain in other AND/OR Number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced AND/OR One or more sub-dominant F/S groups replaced by F/S groups not expected for the site AND/OR Number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced AND/OR Relative dominance of F/S groups has been modified from that expected for the site AND/OR number of species within F/S slightly reduced.	Dominant: C4 perennial bunch grasses (side-oats grama co-dominant with hairy, black & blue grama) Sub-dominant: succulents, woody shrubs and trees (bear grass, yucca, sotol, agave, rhus species, mariola, creosote, juniper) Other: C3 perennial bunch grasses (new mexico feather grass, needle and thread), annual forbs.
13. Plant Mortality/	Dead and/or decadent plants are very common.	Dead plants and/or decadent plants are common.	Moderately more plant mortality and/or decadence than expected	Slightly more plant mortality and/or decadence than expected.	Side-oats, black and blue grama and other bunchgrasses can show mortality after multiyear drought. Trees, shrubs and succulents can show decadence following multiyear drought but should not exhibit mortality.
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather**.**	Moderately more or less relative to site potential and weather.	Slightly more or less relative to site potential and weather.	20-25%
15. Annual Production	Less than 20% of potential production for the site based on recent weather.	20-40% of potential production for the site based on recent weather.	40-60% of potential production for the site based on recent weather.	60-80% of potential production for the site based on recent weather.	Favorable years: 1000 lbs/acre Normal: 800 lbs/acre Unfavorable years: 500 lbs/acre
16. Invasive Plants	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily in disturbed areas within the site.	None currently known
17.Reproductivc Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is moderately reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is slightly reduced relative to recent climatic conditions**.**	Grama grasses should reproduce by seed and tiller and/or stolon most years. Trees, shrubs, and succulents should be capable of seed reproduction most years.

* Descriptions should be more specific than those listed in the General Example, if possible, and refer to the criteria included in the None to Slight description, which is based on the Reference Sheet. See page __ for an Reference Sheet example.